REMARKS

This Amendment is filed in response to the Office Action dated February 4, 2011, which has a shortened statutory period set to expire May 4, 2011. A one-month extension of time is provided herewith, thereby allowing Applicant to respond by June 4, 2011.

Applicant addresses informalities in Claims 31, 34, and 35

Claims 31, 34, and 35 are amended to conform to the Examiner's suggestions. Therefore, Applicant requests reconsideration and withdrawal of the objection to Claims 31, 34, and 35.

Claims 1, 4, 15, 18, 34, and 35 are patentable over U.S. Patent 5,313,169 (Fouche) and U.S. Patent 5,726,978 (Frodigh).

> Claim 1, as amended, now recites in part:
> means for adjusting the common frequency reference in each of the remote transceiver units in accordance with the offset in at least one second signal to be transmitted between the remote and central transceiver units to correct for an error in the common frequency reference, so that effects of the offset in each of the remote transceiver units will be substantially reduced in preemptive manner, the second signal being in substantial frequency lock with the common frequency.

Applicant respectfully submits that neither Fouche nor Frodigh disclose or suggest these limitations. Fouche teaches re-aligning of local oscillators of a receiver to facilitate receiving a signal (from a transmitter) modulated by at least one circuit for inverse fast Fourier Transform computation. Col. 1, lines 9-12. Fouche teaches computing values for carrying out the re-alignment of the frequency of the local oscillator and a local sampling oscillator for sampling an ADC converter. Col. 10, lines 33-37. These values are sent to

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receiver circuits to modify the value of 1, i.e. the value of the digital delay measured as a number of packets of 1152 samples. Col. 10, lines 39-43.

Frodigh teaches that as communications take place, the signal quality level (C/I, carrier to interference ratio) of the sub-carriers within the subset of M subcarriers and the interference level (I) of all N available subcarriers are periodically measured. Col. 4, lines 56-59. These C/I and I measurement results are reported to a system. Col. 4, lines 59-60. Frodigh specifically teaches that a mobile station transmits only a limited set of measurement results to the system at certain select reporting intervals rather than all measurement results. Col. 5, lines 1-4. The transmitted limited set of measurement results comprises a select number of the lowest C/I measurement results and a select number of the lowest I measurement results. Col. 5, lines 4-7. The transmission of the limited set of results reduces the use of uplink system signaling resources. Col. 5, lines 7-9. As further taught by Frodigh, in col. 9, lines 16-37 (referring to FIGS. 3A and 3C):

> When a mobile station functions as link receiver, the processor 346 transfers the ACA data to the mobile station transmitter for transmission to the system over interface 362 which comprises the uplink on the appropriate control channel. In a base station as link receiver, the processor 346 transfers the ACA data to the MSC over interface 362 which comprises landline or other connections. ACA processing portion 360 operates on the data and then returns appropriate subcarrier assignment commands to link receiver 330 over interface 364 which comprises landline or other connections when the base station is the link receiver, or the down link on the appropriate control channel when the mobile station is the link receiver. Processor 346 of link receiver 330 receives the commands and then generates the correct input parameters for the receiver so that the correct subcarriers for the link are received. ACA processing

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portion 360 also sends commands to MAP circuitry 304
associated with link transmitter 300 over interface
366. MAP circuitry 304 then maps the M symbols to the
appropriate outputs of MAP circuitry 304 so that the
correct subset of M subcarriers is transmitted on.

Thus, the C/I and I measurements are used to reconfigure
the subset of M subcarriers to reduce co-channel interference on
the link. Abstract.

As shown above, both Fouche and Fordigh fail to disclose or
suggest the recited second signal, which is transmitted between
the remote and central transceiver units to correct for an error
in the common frequency reference, so that effects of the offset
in each of the remote transceiver units will be substantially
reduced in **preemptive manner**, the **second signal being in
substantial frequency lock with the common frequency**.
Therefore, Applicant requests reconsideration and withdrawal of
the rejection of Claim 1.

Claim 4 depends from Claim 1 and therefore is patentable
for at least the reasons presented for Claim 1. Based on those
reasons, Applicant requests reconsideration and withdrawal of
the rejection of Claim 4.

Claim 15, as amended, now recites in part:

> adjusting the common frequency reference in each
> of the remote transceiver units in accordance with the
> offsets in at least one second signal to be
> transmitted between the remote and the central
> transceiver units to correct for an error in the
> common frequency reference, so that effects of the
> offset in each of the remote transceiver units will be
> substantially reduced in preemptive manner, the second
> signal being in substantial frequency lock with the
> common frequency.

Therefore, Claim 15 is patentable for substantially the
same reasons presented for Claim 1. Based on those reasons,

Applicant requests reconsideration and withdrawal of the rejection of Claim 15.

Claim 18 depends from Claim 15 and therefore is patentable for at least the reasons presented for Claim 15. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claim 18.

Claim 34, as amended, now recites in part:

means for adjusting the common frequency references in the first and the second remote transceiver units in accordance with the offsets in at least one second signal to be transmitted between the first or second remote transceiver unit and the central transceiver unit to correct for errors in the common frequency references, so that effects of the offsets will be substantially reduced in preemptive manner, the second signal being in substantial frequency lock with the common frequency.

Therefore, Claim 34 is patentable for substantially the same reasons presented for Claim 1. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claim 34.

Claim 35, as amended, now recites in part:

means for adjusting the common frequency reference in each of the first and the second remote transceiver units in accordance with the offsets in at least one second signal to be transmitted by between the remote and the central transceiver units to correct for errors in the common frequency reference, so that the effects of the offsets will be substantially reduced in preemptive manner, the second signal being in substantial frequency lock with the common frequency.

Therefore, Claim 35 is patentable for substantially the same reasons presented for Claim 1. Based on those reasons, Applicant requests reconsideration and withdrawal of the rejection of Claim 35.

<u>Claims 5, 8, 19, 22, and 29 are patentable over Fouche, Fordigh,</u>
<u>and U.S. Patent 5,727,037 (Maneatis).</u>

Claims 5 and 8 depend from Claim 1 and therefore are patentable for at least the reasons presented for Claim 1. Maneatis fails to remedy the deficiency of Fouche and Fordigh with respect to Claim 1. Specifically, Maneatis fails to disclose or suggest the recited second signal, which is transmitted between the remote and central transceiver units to correct for an error in the common frequency reference, so that effects of the offset in each of the remote transceiver units will be substantially reduced in preemptive manner, the second signal being in substantial frequency lock with the common frequency. Based on all of the above reasons, Applicant requests reconsideration and withdrawal of the rejection of Claims 5 and 8.

Claims 19 and 22 depend from Claim 15 and therefore are patentable for at least the reasons presented for Claim 15. Maneatis fails to remedy the deficiency of Fouche and Fordigh with respect to Claim 15. Specifically, Maneatis fails to disclose or suggest adjusting the common frequency reference in each of the remote transceiver units in accordance with the offsets in at least one second signal to be transmitted between the remote and the central transceiver units to correct for an error in the common frequency reference, so that effects of the offset in each of the remote transceiver units will be substantially reduced in preemptive manner, the second signal being in substantial frequency lock with the common frequency. Based on all of the above reasons, Applicant requests reconsideration and withdrawal of the rejection of Claims 19 and 22.

Claim 29, as amended, now recites in part:

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the frequency shift block and the timing acquisition unit coupled to receive the offset information and digital data to be transmitted and to each generate at least one second signal to be received by the central transceiver unit, the frequency shift block and the timing acquisition unit being respectively adapted to digitally shift and sample the digital data in frequency in accordance with the common frequency references and the carrier and the sampling frequency offsets corresponding thereto to correct for errors in the common frequency references, so that effects of the carrier and the sampling frequency offsets will be substantially reduced in preemptive manner for continuous wireless bi-directional communication between the remote and the central transceiver units for the direct exchange of information.

Applicant respectfully submits that neither Fouche nor Frodigh disclose or suggest these limitations. Fouche teaches re-aligning of local oscillators of a receiver to facilitate receiving a signal (from a transmitter) modulated by at least one circuit for inverse fast Fourier Transform computation. Col. 1, lines 9-12. Fouche teaches computing values for carrying out the re-alignment of the frequency of the local oscillator and a local sampling oscillator for sampling an ADC converter. Col. 10, lines 33-37. These values are sent to receiver circuits to modify the value of 1, i.e. the value of the digital delay measured as a number of packets of 1152 samples. Col. 10, lines 39-43.

Frodigh teaches that as communications take place, the signal quality level (C/I, carrier to interference ratio) of the sub-carriers within the subset of M subcarriers and the interference level (I) of all N available subcarriers are periodically measured. Col. 4, lines 56-59. These C/I and I measurement results are reported to a system. Col. 4, lines 59-60. Frodigh specifically teaches that a mobile station transmits only a limited set of measurement results to the

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system at certain select reporting intervals rather than all measurement results. Col. 5, lines 1-4. The transmitted limited set of measurement results comprises a select number of the lowest C/I measurement results and a select number of the lowest I measurement results. Col. 5, lines 4-7. The transmission of the limited set of results reduces the use of uplink system signaling resources. Col. 5, lines 7-9. As further taught by Frodigh, in col. 9, lines 16-37 (referring to FIGS. 3A and 3C):

> When a mobile station functions as link receiver, the processor 346 transfers the ACA data to the mobile station transmitter for transmission to the system over interface 362 which comprises the uplink on the appropriate control channel. In a base station as link receiver, the processor 346 transfers the ACA data to the MSC over interface 362 which comprises landline or other connections. ACA processing portion 360 operates on the data and then returns appropriate subcarrier assignment commands to link receiver 330 over interface 364 which comprises landline or other connections when the base station is the link receiver, or the down link on the appropriate control channel when the mobile station is the link receiver. Processor 346 of link receiver 330 receives the commands and then generates the correct input parameters for the receiver so that the correct subcarriers for the link are received. ACA processing portion 360 also sends commands to MAP circuitry 304 associated with link transmitter 300 over interface 366. MAP circuitry 304 then maps the M symbols to the appropriate outputs of MAP circuitry 304 so that the correct subset of M subcarriers is transmitted on.

Thus, the C/I and I measurements are used to reconfigure the subset of M subcarriers to reduce co-channel interference on the link. Abstract.

Maneatis teaches a system and method for using self-biased circuits to reduce phase jitter and phase offset in phase locked loops and frequency. Abstract. The self-biased apparatus can be implemented as part of a multiple loop apparatus including a

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first loop to generate an output signal having a frequency that is substantially equal to an integral multiple N of the frequency of the input signal and a second loop, coupled to the first loop, to generate a second output signal from the first lop output signal, wherein the second output signal is substantially in phase with the input signal and has a frequency substantially equal to the integer multiple n of the frequency of the input signal. Abstract.

As shown above, Fouche, Fordigh, and Maneatis, even if combined, fail to disclose or suggest the recited frequency shift block in the first remote transceiver unit and the timing acquisition unit in the second remote transceiver unit. Therefore, Applicant requests reconsideration and withdrawal of the rejection of Claim 29.

Claims 9, 23, and 31 are patentable over Fouche, Fordigh, Maneatis, and U.S. Patent 5,818,889 (Cook)

Claim 9 depends from Claim 1 and therefore is patentable for at least the reasons presented for Claim 1. Maneatis and Cook fail to remedy the deficiency of Fouche and Fordigh with respect to Claim 1. Specifically, Maneatis and Cook also fail to disclose or suggest the recited means for adjusting. Therefore, Applicant requests reconsideration and withdrawal of the rejection of Claim 9.

Claim 23 depends from Claim 15 and therefore is patentable for at least the reasons presented for Claim 15. Maneatis and Cook fail to remedy the deficiency of Fouche and Fordigh with respect to Claim 15. Specifically, Maneatis and Cook also fail to disclose or suggest the recited adjusting. Therefore, Applicant requests reconsideration and withdrawal of the rejection of Claim 23.

Claim 31, as amended, now recites in part:

variably adjustable devices coupled to receive
the offset signals, the variably adjustable devices
being respectively adapted to adjust the reference
frequency of the crystal oscillator and a sampling
clock of an analog-to-digital converter in accordance
with the offset signals to correct for errors in the
common frequency references, so that effects of the
carrier and the sampling frequency offsets in the
second signal to be perceived by the central
transceiver unit will be substantially reduced in
preemptive manner for continuous wireless bi-
directional communication between the remote and the
central transceiver units for direct exchange of
information.

Applicant respectfully submits that neither Fouche nor
Frodigh disclose or suggest these limitations. Fouche teaches
re-aligning of local oscillators of a receiver to facilitate
receiving a signal (from a transmitter) modulated by at least
one circuit for inverse fast Fourier Transform computation.
Col. 1, lines 9-12. Fouche teaches computing values for
carrying out the re-alignment of the frequency of the local
oscillator and a local sampling oscillator for sampling an ADC
converter. Col. 10, lines 33-37. These values are sent to
receiver circuits to modify the value of 1, i.e. the value of
the digital delay measured as a number of packets of 1152
samples. Col. 10, lines 39-43.

Frodigh teaches that as communications take place, the
signal quality level (C/I, carrier to interference ratio) of the
sub-carriers within the subset of M subcarriers and the
interference level (I) of all N available subcarriers are
periodically measured. Col. 4, lines 56-59. These C/I and I
measurement results are reported to a system. Col. 4, lines 59-
60. Frodigh specifically teaches that a mobile station
transmits only a limited set of measurement results to the
system at certain select reporting intervals rather than all
measurement results. Col. 5, lines 1-4. The transmitted

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limited set of measurement results comprises a select number of
the lowest C/I measurement results and a select number of the
lowest I measurement results. Col. 5, lines 4-7. The
transmission of the limited set of results reduces the use of
uplink system signaling resources. Col. 5, lines 7-9. As
further taught by Frodigh, in col. 9, lines 16-37 (referring to
FIGS. 3A and 3C):

> When a mobile station functions as link receiver,
> the processor 346 transfers the ACA data to the mobile
> station transmitter for transmission to the system
> over interface 362 which comprises the uplink on the
> appropriate control channel. In a base station as link
> receiver, the processor 346 transfers the ACA data to
> the MSC over interface 362 which comprises landline or
> other connections. ACA processing portion 360 operates
> on the data and then returns appropriate subcarrier
> assignment commands to link receiver 330 over
> interface 364 which comprises landline or other
> connections when the base station is the link
> receiver, or the down link on the appropriate control
> channel when the mobile station is the link receiver.
> Processor 346 of link receiver 330 receives the
> commands and then generates the correct input
> parameters for the receiver so that the correct
> subcarriers for the link are received. ACA processing
> portion 360 also sends commands to MAP circuitry 304
> associated with link transmitter 300 over interface
> 366. MAP circuitry 304 then maps the M symbols to the
> appropriate outputs of MAP circuitry 304 so that the
> correct subset of M subcarriers is transmitted on.

Thus, the C/I and I measurements are used to reconfigure
the subset of M subcarriers to reduce co-channel interference on
the link. Abstract.

Maneatis teaches a system and method for using self-biased
circuits to reduce phase jitter and phase offset in phase locked
loops and frequency. Abstract. The self-biased apparatus can
be implemented as part of a multiple loop apparatus including a
first loop to generate an output signal having a frequency that
is substantially equal to an integral multiple N of the

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frequency of the input signal and a second loop, coupled to the first loop, to generate a second output signal from the first lop output signal, wherein the second output signal is substantially in phase with the input signal and has a frequency substantially equal to the integer multiple n of the frequency of the input signal. Abstract.

Cook teaches a phase shifting system including means for receiving a reference clock signal having a predetermined phase, means for manipulating the reference clock to generate at least one multi-level waveform derived therefrom, and means for selecting desired levels from the multi-level waveform to provide an output signal of desired phase. Col. 2, lines 19-25.

As shown above, Fouche, Fordigh, Maneatis, and Cook, even if combined, fail to disclose or suggest the recited variably adjustable devices. Therefore, Applicant requests reconsideration and withdrawal of the rejection of Claim 31.

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CONCLUSION

Claims 1, 4, 5, 8, 9, 15, 18, 19, 22, 23, 29, 31, 34, and 35 are pending in the present application. Allowance of these claims is respectfully requested.

If there are any questions, please telephone the undersigned at 408-451-5907 to expedite prosecution of this case.

Respectfully submitted,

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